

REMARKS

Reconsideration and allowance of the present application based on the following remarks are respectfully requested.

Claims 1-26 are pending in the present application. Claims 1, 16, 17 and 21 have been amended to further recite the claimed invention without the intention of narrowing the claims.

Information Disclosure Statement

The Abstract for Singapore Patent document SG 72598 on the Information Disclosure Statement filed October 24, 2003 was crossed out. The Examiner contends that no such document was submitted that identifies itself as SG 72598. Applicant believes that a document that identifies itself as SG 72598 was included with the Information Disclosure Statement filed October 24, 2003. Applicant's copy shows a reference No. XP-002252810 near the top of the document but SG 72598 in the body. However, to ensure consideration of this document, Applicant is resubmitting a copy this document along with a form PTO-1449 listing the document. Applicant respectfully requests the Examiner to return an initialed copy of the enclosed Form PTO-1449 to Applicant with the next Office communication to indicate that the reference SG 72598 has been considered, per MPEP § 609.

35 USC § 103 Rejections

Claims 1-24 and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Moors et al. (U.S. Patent Application Publication No. 2002/0109828 A1) in view of Japanese patent application publication JP 6-230194 (hereinafter JP '194). Applicant respectfully traverses these rejections for at least the following reasons.

The Office Action concedes that Moors et al. do not disclose, teach or suggest that an optical element of the projection system has a layer comprising Buckminsterfullerenes. The Office Action contends that JP '194 discloses an x-ray reflecting mirror with a layer 1 having fullerene C<sub>60</sub>. The Office Action then contends that it would have been obvious to one skilled in the art to provide an optical element of the reflective projection system disclosed in Moors et al. with a fullerene layer to yield the claimed invention. Applicant respectfully disagrees.

JP '194 merely discloses use of a layer of fullerenes to improve the reflection efficiency (reflection factor) of a x-ray reflecting mirror (see paragraph 0007 in the English translation of JP '194). In contrast, in the lithographic apparatus of claim 1, claim 17 or claim 21 and in the device manufacturing method of claim 16, a layer comprising fullerenes is provided to an optical element or a mirror, as the case may be, to protect against, for example, physical and chemical attack in order to improve lifetime of the optical element or mirror (see, for example, paragraphs 0012 through 0014 in the specification). Because JP '194 merely discloses, teaches and suggests use of a layer of fullerenes to improve reflection efficiency, one of ordinary skill in the art would not have been led to the claimed invention from Moors et al. and JP '194 nor have been motivated to combine Moors et al. and JP '194 to yield the claimed invention.

Consequently, for at least these reasons, neither Moors et al. nor JP '194, alone or in combination, disclose, teach or suggest the subject matter recited in independent claims 1, 16, 17 and 21.

Therefore, Applicant respectfully submits that claims 1, 16, 17 and 21, and claims 2-15, 18-20, 22-24 and 26 which depend from one of claims 1, 16, 17 and 21, are patentable. Thus, Applicant respectfully requests that the rejection of claims 1-24 and 26 under § 103(a) over the combination of Moors et al. and JP '194 be withdrawn.

Claims 1-24 and 26 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Babonneau et al. (U.S. Patent No. 6,724,465 B2) in view of JP '194. Applicant respectfully traverses these rejections for at least the following reasons.

The Office Action concedes that Babonneau et al. do not disclose, teach or suggest a mirror having a layer comprising Buckminsterfullerenes. The Office Action contends that JP '194 discloses an x-ray reflecting mirror with a layer 1 having fullerene C<sub>60</sub>. The Office Action then contends that it would have been obvious to one skilled in the art to provide a mirror of the reflective projection system disclosed in Babonneau et al. with a fullerene layer to yield the claimed invention. Applicant respectfully disagrees.

As stated above, JP '194 merely discloses use of a layer of fullerenes to improve the reflection efficiency (reflection factor) of a x-ray reflecting mirror (see paragraph 0007 in the English translation of JP '194). In contrast, in the lithographic apparatus of claim 1, claim 17 or claim 21 and in the device manufacturing method of claim 16, a layer comprising fullerenes is provided to an optical element or mirror, as the case may be, to protect the

optical element or mirror against, for example, physical and chemical attack in order to improve lifetime of the optical element or mirror (see, for example, paragraphs 0012 through 0014 in the specification). Because JP '194 merely discloses, teaches and suggests use of a layer of fullerenes to improve reflection efficiency, one of ordinary skill in the art would not have been led to the claimed invention from Babonneau et al. and JP '194 nor have been motivated to combine Babonneau et al. and JP '194 to yield the claimed invention.

Consequently, for at least these reasons, neither Babonneau et al. nor JP '194, alone or in combination, disclose, teach or suggest the subject matter recited in independent claims 1, 16, 17 and 21.

Therefore, Applicant respectfully submits that claims 1, 16, 17 and 21, and claims 2-15, 18-20, 22-24 and 26 which depend from one of claims 1, 16, 17 and 21, are patentable. Thus, Applicant respectfully requests that the rejection of claims 1-24 and 26 under § 103(a) over the combination of Babonneau et al. and JP '194 be withdrawn.

Claim 25 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Moors et al. in view of JP '194 as applied to claim 21 and further in view of Dougherty et al. (U.S. Patent No. 5,391,329). Applicant respectfully traverses these rejections for at least the following reasons.

Claim 25 depends from claim 21. Therefore, for at least the reasons presented above with respect to claim 21, Applicant respectfully submits that claim 25 is patentable over the combination of Moors et al. and JP '194.

Dougherty et al. fails to cure the deficiencies noted above in JP '194. Dougherty et al. merely discloses a process for making optical limiters having a graded axial distribution of a reverse saturable absorber compound (fullerene) in a host matrix (polymethyl methacrylate or polycarbonate). Dougherty et al. merely uses the optical limiters (containing fullerenes) to limit the light intensity reaching an optical sensor (see col. 1, lines 19-59).

In contrast, in the lithographic apparatus of claim 21, a layer comprising fullerenes is provided to an optical element to protect the optical element against, for example, physical and chemical attack in order to improve lifetime of the optical element (see, for example, paragraphs 0012 through 0014 in the specification). Because Dougherty et al. merely discloses, teaches and suggests use of fullerenes as a reverse saturable absorber to limit light intensity reaching an optical sensor, one of ordinary skill in the art would not have been led to the claimed invention from Moors et al., JP '194 and Dougherty et al. nor have been

motivated to combine Dougherty et al., Moors et al. and JP '194 to yield the claimed invention.

Consequently, none of Moors et al., JP '194 and Dougherty et al., alone or in combination, disclose, teach or suggest the subject matter recited in claim 21. Therefore, since claim 25 depends from claim 21, Applicant respectfully submits that claim 25 is patentable. Thus, Applicant respectfully requests that the rejection of claim 25 under § 103(a) over the combination of Moors et al., JP '194 and Dougherty et al. be withdrawn.

CONCLUSION

All rejections have been addressed. It is respectfully submitted that the present application is in condition for allowance, and a notice to that effect is earnestly solicited.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Should there be any questions or concerns regarding this application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,  
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